

REMARKS

We are in receipt of the Office Action dated September 9, 2003, and the above amendment and following remarks are made in light thereof.

Claims 1-80 are pending in the application. Pursuant to the Office Action, Claims 1-4, 11-14, 21-24, 31-34, 41-44, 51-54, 61-64 and 71-74 stand rejected under 35 U.S.C. §102(e) as being anticipated by Kubota et al. Claims 5-10, 15-20, 25-30, 35-40, 45-40, 55-60, 65-70 and 75-80 stand rejected under 35 U.S.C. §103(e) as being unpatentable over Kubota et al., Sasaki et al., Hasegawa et al.


Kubota et al. disclose that "the gradation voltage has a ramp waveform such that its level successively rises like staircase during periods T_1 through T_2^k which is divided into 2^k from the front of a horizontal scanning period (1H) (each divided period is about $1/2^k$ of the horizontal scanning period)" (col. 21, l. 52-56). Also, Kubota et al. disclose that "The retained n-bit digital signal DAT is divided into m bit and k bit so as to be retained by the latches 13;" "one of the 2^k period selecting signals PRD is selected according to 2^k decoded signals from the other latch 13;" "one of the 2^m gradation power source lines PL is selected. As a result, a desired gradation voltage V is outputted to the source line SL during one period of the 2^k periods;" and "one of the gradation voltages with a level of 2^{m+k} ($=2^n$) is outputted," (col. 23, l. 16-53). However, Kubota et al. fail to teach the claimed feature "time gradation" of each of the independent claims 1, 11, 21, 31, 41, 51, 61 and 71. Kubota et al. disclose the gradation voltage and merely teach that Horizontal scanning period H is divided into $1/2^k$ equally in Fig.8. Also, the time gradation which the application teaches is used in "totaling the gradation voltage levels in the sub-frame line periods and then time-averaging the total" as described in this specification p. 15, l. 7-8. Therefore, the independent claims are clearly different from Kubota et al.'s cited reference.

In addition, Kubota et al. fail to teach the claimed feature "one frame of image consists of 2^{m-n} sub-frames to perform time gradation display" claimed in claims 11, 21, 41, 51, 61, and 71. Further, Kubota et al. fail to teach the claimed feature "obtaining $(2^m - (2^{m-n} - 1))$ patterns of gradation display" claimed in claims 21, 51 and 71.

It should also be noted that the limitation "inputted from the external," which was recited in the independent claims, is deleted from the amended claims 1, 11, 21, 31, 41, 51, 61 and 71 in as much as we feel this feature is not necessary.

Accordingly, Applicant respectfully submits that the pending claims are allowable over the art of record, and an early Office Action in this regard is earnestly solicited.

Respectfully submitted,



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